



Quality of Care and Outcomes Assessment

RED BLOOD CELL INDICES AND DEVELOPMENT OF HOSPITAL-ACQUIRED ANEMIA DURING ACUTE MYOCARDIAL INFARCTION

ACC Moderated Poster Contributions
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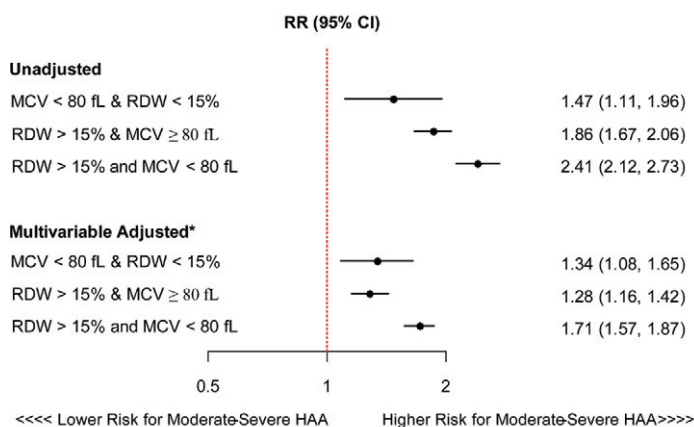
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Background: Hospital-acquired anemia (HAA) is common, associated with poor outcomes, and often develops in the absence of bleeding in acute myocardial infarction (AMI) patients. Unrecognized iron deficiency may be a risk factor for HAA, but routine screening of all AMI patients would be costly. Whether red cell distribution width (RDW) and mean corpuscular volume (MCV), markers of iron deficiency available at no additional cost, are associated with HAA is unknown.

Methods: We studied 15,133 AMI patients without anemia at admission as defined age, gender and race specific thresholds. Moderate-severe HAA was defined as nadir Hgb ≤ 11 g/dl. We examined the association between low MCV (< 80 fL), elevated RDW ($> 15\%$), on admission and moderate-severe HAA using multivariable Poisson regression.

Results: Moderate-severe HAA was more frequent in patients with high RDW and low MCV (45.5%), high RDW and normal MCV (33.0%), and normal RDW but low MCV (28.0%) than those with normal RDW and MCV (18.3%) ($p < 0.001$). In comparison to patients with normal RDW and MCV, those with high RDW and low MCV, high RDW and MCV ≥ 80 fL or normal RDW and low MCV were independently more likely to develop moderate-severe HAA (Figure).

Conclusion: Abnormal RDW and MCV are independent predictors of moderate-severe HAA. Studies are needed to determine the prevalence of iron deficiency in patients with abnormal red cell indices and the impact of iron supplementation on outcomes.



*Adjusted for age, gender, race (Caucasian vs. other), chronic kidney disease, heart failure, hypertension, diabetes, prior myocardial infarction, MI type (STEMI vs. NSTEMI), acute renal failure, cardiogenic shock, mechanical ventilation, cardiac catheterization or PCI, use of thrombolytics, intravenous heparin, bivalirudin, thienopyridines, aspirin, angiotensin converting enzyme inhibitor/angiotensin receptor blocker or beta blockers